

A NOTE ON AN UNUSUALLY COMPLETE SPECIMEN OF
DASYPUS BELLUS (SIMPSON) FROM FLORIDA¹

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In 1956 Mr. Peter Drummond, a member of the Florida Speleological Society, discovered a Pleistocene deposit in Mefford Cave of more than usual interest. Of considerable importance is the fact that this locality has yielded remains of an extinct armadillo, *Dasypus bellus* (Simpson), more complete than any previously reported.

Mefford Cave, located approximately 1½ miles south of Reddick, Marion County, Florida, is a fairly large cavern in the Ocala limestone. Considerable "breakdown" covers most of the floor, so that the earth filling is unknown throughout most of the cave. In some of the deeper parts of the cavern the earthen floor has been recently eroded. The deposits which are thus revealed are composed largely of bedded brownish to reddish brown sand of presumed Pleistocene age and Miocene clay and residual marine fossils of the Hawthorne formation. In at least one fairly extensive pocket Pleistocene vertebrates are found in the bedded sandy earth.

Apparently the present entrance is fairly recent. During some interval of the Pleistocene a fissure near the vertebrate site was open to the surface and erosion carried the overlying Hawthorne formation, or its residuum, into the cavern. Following this, supposed Pleistocene sands and the remains of contemporary vertebrates were washed into the cavern, presumably through the fissure which has since become filled with rubble. The opening must have been large enough to allow animals at least the size of *Dasypus bellus* to pass through, since the position and nature of the specimen clearly indicate that it died nearby.

Continued filling of the cavern occurred to some unknown date, when lowered water tables initiated another erosional cycle. This emptied large parts of the cave of its earthen contents; portions of which occur as erosional remnants in various parts of the cavern. Continued erosion brought about considerable collapse of the limestone walls and ceiling.

¹ A contribution from The Department of Biology and The Florida State Museum, University of Florida.

In addition to the specimen of *Dasyopus bellus*, remains of other vertebrates were found at the same locality and horizon. These include an excellent specimen of *Meleagris gallopavo*, the American Turkey, composed of an exceptionally fine skull and lower jaw, as well as associated parts of the post-cranial skeleton. In addition, scattered remains of *Testudo sellardsi* (?), *Equus* sp. and *Holmesina septentrionalis* have been found. Numerous remains of small reptiles and amphibians are also available from the same locality, but these have not yet been studied. On the basis of the available material there is little reason to postulate ecological conditions markedly different from those existing in the area at the present time, i.e., dry, open forest. On the other hand, there is no evidence to indicate that conditions have remained the same since deposition of the fossiliferous beds in the cavern. The deposit is presumed to be Late Pleistocene or early Post Pleistocene.

The fossil specimen of *Dasyopus bellus*, forming the basis of this note (No. 2478, University of Florida Collections) hardly needs detailed description, since in almost all particulars, except size, the available partial and complete elements are identical to those of the Recent North American species, *Dasyopus novemcinctus*.

Dasyopus bellus was first described by Simpson (1929) from fragmentary material collected from the Pleistocene of Seminole Field, Pinellas County, Florida. The diagnostic character of the new species was stated as being largely a matter of size; averaging over twice that of the Recent form, *Dasyopus novemcinctus*, and nearly equal to that of several extinct South American species. In 1931 Holmes and Simpson described the characteristics of isolated pieces of armor of *Dasyopus bellus* on the basis of abundant scutes then available from Seminole Field, Florida. However, little direct evidence was available as to the arrangement and gross structure of the carapace, although it was assumed that *D. bellus* had nearly the same general appearance as that of *D. novemcinctus*. It is thus of interest that the shell of the present specimen of *Dasyopus bellus* is sufficiently complete so that there is now no reason to doubt that the shape and disposition of the separate scutes of the carapace are different than they are in the Recent form.

The specimen from Mefford Cave is a mature female, attested by the fact that the remains of an unknown number of young were found within the confines of the carapace. The epiphyses of the specimen are not firmly co-ossified with the shafts of the bones of

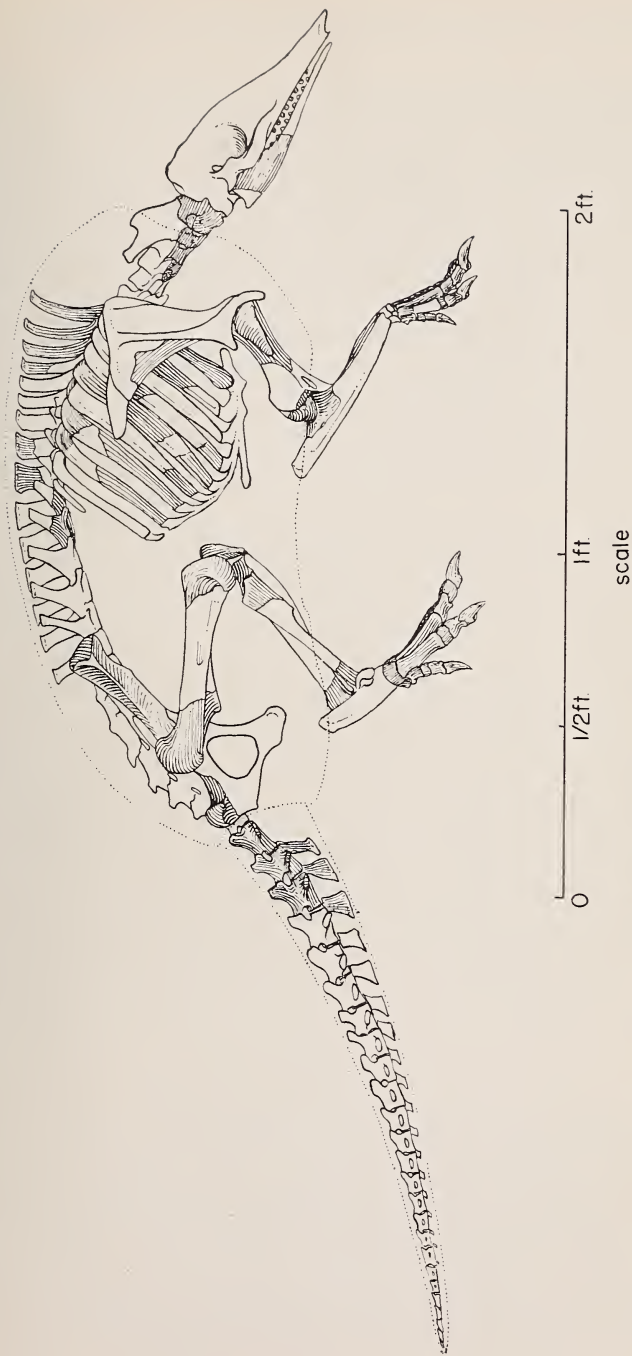


Figure 1. Reconstruction of *Dasypus bellus* (Simpson) based on U. F. 2478, an unusually complete specimen from Pleistocene or Post Pleistocene deposits of Mefford Cave, Marion County, Florida. Available skeletal elements are shaded. Although large portions of the carapace are available only the general shape of this structure is indicated by dotted lines.

the appendicular skeleton, suggesting that, though mature, it was not an old female.

The available remains of this individual include large numbers of both isolated and juxtaposed plates of the carapace, isolated teeth, part of each of the mandibles, a number of vertebrae, a complete hind foot with the exception of the calcaneum, and parts of the remaining feet, as well as the ends of most of the long bones and a number of fragmentary ribs (Fig. 1). Unfortunately, the caudal armor is represented by only a few isolated plates. Presuming proportions of the extinct and modern species of *Dasyppus* to be nearly the same, the present specimen was about four feet long in life. Larger isolated plates from several other localities in Florida suggest that the species attained an even greater size, perhaps as large as five feet.

Simpson (1929) describes some of the teeth of this species in a jaw collected by C. P. Singleton at Melbourne, Florida. A number of isolated teeth are available in the present specimen. They differ in no regard from those of the modern species, or of those described by Simpson.

The posterior portion of both the left and right mandibles are available. Both fragments are provided with alveoli for the two most posterior teeth. The general shape of the available portions of these elements, plus that of the alveoli and the position and relative size of the mandibular foramen are identical to the same characters in the Recent species. The Melbourne specimen includes five teeth and an alveolus for another anterior to these.

The epiphyses and ends of the shafts of many of the long bones are available. They indicate no difference from those of Recent specimens of *D. novemcinctus*, except that they are considerably larger. The available ribs and girdle elements are also identical to those of *D. novemcinctus* in regards to general shape and proportions.

Of particular interest is the fact that almost the entire set of scutes making up the carapace is available, though most of the elements are isolated from one another. There are however, some fairly large sections of carapace available of this specimen in which all of the scutes are still connected. Holmes and Simpson (1931) have described the individual scutes of this form in considerable detail and there seems to be little reason to consider the isolated pieces of the present specimen to any great extent. There is, how-

ever, one statement made by Holmes and Simpson that requires comment. According to these authors the individual buckler scutes from Seminole Field were only occasionally provided with a follicle on the posterior margin of the primary scale. In the specimen from Mefford Cave one, or even two follicles in this area are quite common, agreeing with the modern species in this regard. In those sections of both the anterior and posterior bucklers which are available in the fossil specimen from Mefford Cave the ornamentation and distribution of the immovable scutes are identical to those in the same regions in the Recent species. The available articulated movable plates of the bands are also identical to those in the Recent species and to the isolated pieces described by Holmes and Simpson. The entire most posterior movable transverse band and adjacent immovable portion of the fossil specimen are available, indicating that, as in *D. novemcinctus*, there are approximately 31 members in each transverse band. In addition, large articulated portions of the remaining bands are also available. Nine peripheral band plates are available from the right side, indicating that the number of bands in *D. bellus* is probably the same as in the Recent species. Unfortunately, the carapace is not completely articulated, but a reconstruction based on the available articulated portions indicates that, like the remainder of the skeleton, *D. bellus* is very close to *D. novemcinctus*. In view of the greater variation in number of follicles on the posterior margin of the primary scale than was present in the material previously described from Seminole Field, the larger size of *Dasypus bellus* remains the only diagnostic character by which it can be readily distinguished from *Dasypus novemcinctus*. It is hoped that in the future a complete skull will be found, in which other diagnostic characters may become evident.

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